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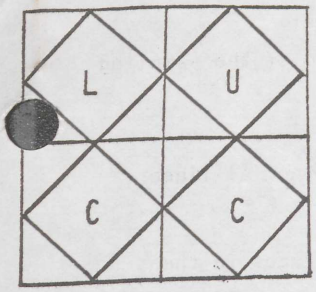

USER SERVICES EXTERNAL REPORT

LEHIGH UNIVERSITY COMPUTING CENTER
CDC 6400 (CM65K, ECS125K, SCOPE 3.4.4), VARIAN 620/f
DECsystem 2040 (CM128K, TOPS-20 V2B)
Vol. V, No. 1
August 25, 1977

NEW COMPUTING SYSTEM NEWS

Some of the hardware for the new computing system has arrived, and is being installed and tested. Computing Center staff training has begun, and a test group of users has been selected to help in the evaluation of the system. In the late fall, a decision will be made regarding the final hardware configuration for the production system to be operational in January, 1978. General training of faculty members is scheduled to begin in November and general user training is scheduled for February, 1978.

Users interested in receiving bulletins regarding the progress of the system implementation should contact User Services, Room 119 Packard Laboratory.

NEW TERMINAL FACILITIES

A total of ten new Perkin-Elmer 1100 terminals will be placed in the Christmas-Saucon and Drown Hall sites additions to the existing facilities. These are TV screen type terminals which feature upper/lower case capabilities. Initially, these terminals will be used most extensively in communication with the new computing system.

PACKARD LABORATORY USERS' AREA

As part of the renovation of Packard Laboratory during the summer, the Users' Area was spruced up and rearranged. New work tables, similar to those in the Grace Hall site, were placed in the Users' Area as part of the enhancement.

FROM THE LIBRARIAN

Modified Programs

- QIKPLT (Quick Plotting Routine) (J50006)

  An option has been added to the QIKPLT software to enable the user to preview a plot on the line printer. Calls to QIKPLT and QIKSET are supported by the printer preview software. For plots of multiple functions, up to 10 functions can be plotted. To create a printer plot instead of a CALCOMP plot, the user inserts an LDSET(SUBST=QPLOTQ-QPRNTQ) control card immediately before the control card which executes the program that creates the plot. (The control card which executes the program will usually be an LGO. card).

- IMSL - International Mathematical and Statistical Library

  Edition 6 of the IMSL library has been installed on the system. Approximately forty new subprograms have been added to the library, including the following:

  - Programs for biserial, point biserial and tetra-choric correlation estimation.
  - Program improvements in the area of differential equations.
  - Additional routines to solve the generalized eigenvalue problem for complex matrices.
  - New random number generators including gamma, negative binomial, Cauchy, geometric, hypergeometric, multinomial, log-normal, triangular, and Weibull.
  - A new smoothing routine.

- In-place inversion routine for positive definite symmetric matrices.
- Bessel function codes which compute the values I_0, I_1, J_0, J_1 and Y for a real argument.
- Non-parametric code for probability density estimation in which the parametric form of the sampling density is unknown.
- New subroutines for hierarchical cluster analysis.
- New regression capabilities including simple, multiple and weighted orthogonal polynomial linear regression analyses and residual analyses.

Approximately thirty routines from Edition 5 have been improved. None of the changes in the routines should necessitate changes in existing programs which call them.

The routines modified are:

AFACT	FTAUTO	MDTN	SSRAND
ALSQAN	FTFREQ	RLFOTH	USHV1
ASNKMC	FTMAXL	RLFOTW	USLEAP
BEPATS	GGU4	RLINCF	ZBRENT
CTRBYC	ICSFKU	RLINPF	ZRPQLF
DCADRE	MDBETA	RLSEP	
DREBS	MDFD	RLSTEP	
EHOUSH	MDSTI	RLSUBM	

Subroutine DCS2QU has been deleted from the library. The new routine DBCQDU replaces it. DBCQDU is more reliable and has a slightly shorter execution time. DBCQDU allows the limits of integration to be specified, whereas DCS2QU integrated over the entire domain.

Documentation for the new and modified routines is available at the Packard Laboratory Inquiry Desk.

- JOBFIND - List Status of Queues (J90027)

  The program JOBFIND, which prepares the QLISTs posted at the Packard Laboratory site, now lists all files in the print extended queue (95 character print train files), and all output files in the queues for the Grace Hall and Taylor Hall sites. The latter information can be used to estimate the processing load at the remote sites.
- IMPART FORTRAN Lessons

  As announced in the last issue of USER, a series of CAI (Computer Assisted Instruction) lessons teaching FORTRAN programming has been written. Currently, eight lessons are finished and eight more are planned. The lessons can be accessed with the INTERCOM command IMPART,FORTRAN. User comments on these lessons would be greatly appreciated.

USER DOCUMENTATION

During the summer, the Users' Guide was completely rewritten. It provides documentation on all current operational procedures in a single document. This new publication will soon be available at the University Bookstore.

The guide to the use of the CALCOMP plotters has been reissued as the Plotter Manual, and has been revised to include the following:

- Documentation for the QIKSAX and QIKFORM subroutines
- New sample plots illustrating the multiple function QIKPLT feature, the QIKSAX subroutine, and the QLINE subroutine
- Documentation for the QIKPLT printer preview software

This Manual is available at the University Bookstore.

Technical Bulletin #12, The Account Executive's Guide, has been prepared and will soon be available from User Services, Room 119 Packard Laboratory. This bulletin describes the forms needed to obtain a computer authorization and INTERCOM password, the notices generated by the accounting system, and the various policies and procedures of specific interest to authorization requestors and computer account executives.

POLICY REMINDER - LIQUID INK PLOTS

It is the policy of the Computing Center to activate the liquid ink plotter if there are plot files in the special forms plot queue at the start of operations on Tuesdays and Fridays. Liquid ink will remain in the plotter until all of these files have been plotted. Liquid ink plotting will then continue until the pen runs dry, at which time it will cease until the following Tuesday or Friday. Liquid ink plotting is not scheduled for the entire day on Tuesdays and Fridays.

USAGE STATISTICS	June	July
Total Batch Jobs Processed	17,886	18,177
Central Site Submissions	12,627	12,929
Total INTERCOM Terminal Sessions	8,733	8,062
CP Hours - Batch	128.24	169.07
- INTERCOM	30.96	33.58

OPERATIONAL STATISTICS	June	July
Time System Available during Scheduled Hours (Percentage)		
Batch	99.9	98.8
INTERCOM	99.8	98.9
Mean-Time Between Interruptions (Hours)		
Batch	335.8	77.6
INTERCOM	111.9	62.1